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Docket No.: PC-0044 CIP

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By: [Signature] Printed: Margaret M. Hasson

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Bandman et al.

Title: HUMAN GPCR PROTEINS

Serial No.: 09/895,686

Filing Date: June 28, 2001

Examiner: O'Hara, E.

Group Art Unit: 1646

**Box Non-Fee Amendment**  
Commissioner for Patents  
Washington, D.C. 20231

**RESPONSE TO OFFICE ACTION**

Sir:

This paper is responsive to the Office Action dated October 17, 2002. Applicant(s) request reconsideration of the above-referenced patent application in view of the following amendments and remarks.

**IN THE SPECIFICATION**

Please replace the paragraph beginning at page 1, line 3, with the following rewritten paragraph:

B1 This application is a continuation-in-part of USSN 09/156,513, filed 17 September 1998, now abandoned.

Please replace the paragraph beginning at page 3, line 15 with the following rewritten paragraph:

B2 The invention provides an isolated cDNA comprising a nucleic acid sequence encoding a protein having the amino acid sequence of SEQ ID NOs:1-6. The invention further provides an isolated and purified polynucleotide variant having at least 70% polynucleotide sequence identity to the polynucleotide encoding the polypeptide selected from the group consisting of SEQ ID NOs:1-6. The invention also provides an isolated cDNA selected from a nucleic acid sequence of SEQ ID NOs:7-12, fragments of SEQ ID NOs:7-12 selected from SEQ ID NOs:13-52, and variants of SEQ ID NOs:7-12 selected from

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B2  
SEQ ID NOs:53-74 and the complements of SEQ ID NOs:7-74. The invention additionally provides compositions, a substrate, and a probe comprising the cDNA or the complement of the cDNA. The invention further provides a vector comprising the cDNA, a host cell comprising the vector and a method for making a protein comprising culturing a host under conditions to produce the protein and recovering the protein from culture. The invention still further provides a transgenic cell line or organism comprising the vector containing the cDNA encoding a GPCR. The invention additionally provides a fragment, a variant, or the complement of a cDNA selected from SEQ ID NOs:13-74. In one aspect, the invention provides a substrate containing at least one nucleotide sequence selected from SEQ ID NOs:7-74 or the complements thereof. In a second aspect, the invention provides a probe comprising a cDNA or the complement thereof which can be used in methods of detection, screening, and purification. In a further aspect, the probe is selected from a single-stranded RNA or DNA molecule, a peptide nucleic acid, a branched nucleic acid and the like.

Please replace the paragraph beginning at page 4, line 13, with the following rewritten paragraph:

B3  
The invention provides a purified protein or a portion thereof selected from the group consisting of an amino acid sequence of SEQ ID NOs:1-6, a variant of SEQ ID NOs:1-6 having at least 90% amino acid sequence identity to SEQ ID NOs:1-6, an antigenic epitope of SEQ ID NOs:1-6, and a biologically active portion of SEQ ID NOs:1-6. The invention also provides a composition comprising the purified protein and a pharmaceutical carrier. The invention further provides a method of using a GPCR to treat a subject with infection, inflammation or cancer comprising administering to a patient in need of such treatment the composition containing the purified protein or a portion thereof. The invention still further provides a method for using a protein to screen a library or a plurality of molecules or compounds to identify at least one ligand, the method comprising combining the protein with the molecules or compounds under conditions to allow specific binding and detecting specific binding, thereby identifying a ligand which specifically binds the protein. In one aspect, the molecules or compounds are selected from DNA molecules, RNA molecules, peptide nucleic acids, peptides, proteins, mimetics, agonists, antagonists, antibodies, immunoglobulins, inhibitors, and drugs. In another aspect, the ligand is used to treat a subject with infection, inflammation and cancer, particularly meningioma of the brain.

Please replace the paragraph beginning at page 10, line 26, with the following rewritten paragraph:

B4  
Transcript imaging as shown in Example VII details the specific and differential expression of SEQ ID NOs:7-12 in human disorders. In particular, the transcript images show that the nucleic acid